

Core switches implement inter-VLAN routing



AI Overview

Inter-VLAN routing on a core switch allows devices in different VLANs to communicate by using Layer 3 routing through Switch Virtual Interfaces (SVIs). Overview Inter-VLAN routing is necessary because VLANs segment a network into separate broadcast domains, preventing direct communication between devices in different VLANs. A Layer 3 switch (core switch) can perform routing internally using SVIs, which act as the default gateway for each VLAN, eliminating the need for an external router and improving performance and scalability.

Step-by-Step Configuration

Create VLANs on the Core Switch

```
Enter global configuration mode:
CodeCopy configure terminal
Create VLANs and assign names:
CodeCopy vlan 10 name Sales
vlan 20 name Finance
exit
```

Assign switch ports to VLANs:

```
CodeCopy interface range fa0/1 - 2
switchport mode access
switchport access vlan 10
interface range fa0/3 - 4
switchport mode access
switchport access vlan 20
```

Configure Switch Virtual Interfaces (SVIs)

Create an SVI for each VLAN and assign an IP address:

```
CodeCopy interface vlan 10
ip address 192.168.10.1 255.255.255.0
no shutdown
interface vlan 20
ip address 192.168.20.1 255.255.255.0
no shutdown
```

These IP addresses serve as the default gateways for hosts in each VLAN.

Enable IP Routing on the Core Switch

Activate Layer 3 routing:

```
CodeCopy ip routing
```

This allows the switch to route traffic between VLANs internally.

Configure Trunk Links (if connecting to other switches)

Ensure uplinks to other switches are in trunk mode to carry multiple VLANs:

```
CodeCopy interface gi0/1
switchport mode trunk
switchport trunk allowed vlan 10,20
```

Verify Configuration

Check VLAN and SVI status:

```
CodeCopy show vlan brief
show ip interface brief
```

Test inter-VLAN connectivity by pinging from a host in one VLAN to a host in another VLAN.

Best Practices

Use a dedicated management VLAN separate from user...

Article Content

Inter VLAN Routing by Layer 3 Switch

In the Router on the stick method, both switch and router are needed but while using layer 3 switches, a single switch will perform inter-VLAN routing as well as the layer 2 functions (Vlan),

Legal and Compliance Requirements for Shared WiFi Infrastructure

To enforce strict tenant isolation, the network core must implement stateful, inter-VLAN firewall rules. By default, all inter-VLAN routing must be blocked (Default Deny).

VLAN vs VRF Network Segmentation Explained

. [VLAN vs VRF – Understanding the Core Difference in Network Segmentation](#) [VLAN vs VRF](#)
Network engineers often confuse VLAN and VRF, but they solve different problems. [VLAN \(Virtual Local ...](#)

InterVLAN Routing

In this lesson you will learn about the different options there are for routing between VLANS: Router on a stick, SVI interface or L3 interfaces.

Cisco Layer 3 Switch InterVLAN Routing Configuration

Below is a diagram that we can use as a reference in understanding how to configure Inter-VLAN routing and test inter-switch connectivity across the

Layer 3 Routing – Ubiquiti Help Center

Layer 3 Routing allows a UniFi Switch to route traffic between VLANs and to other destinations using static routes. It is possible use L3 Routing with a UniFi

InterVLAN routing using Layer 3 switch | NetworkAcademy.IO

In this lesson, we will learn to configure a multilayer switch (also called Layer 3 switch) to perform inter-VLAN routing, which was previously done using an actual router.

Inter-VLAN Routing: RoAS, SVIs & What Breaks First

Learn inter-VLAN routing with step-by-step Cisco configs for router-on-a-stick and Layer 3 SVIs. Includes HSRP redundancy, DHCP relay, ACLs, and troubleshooting commands.

Camera VLAN Setup Guide 2025 | Secure IP Camera Network

This guide covers network segmentation fundamentals, equipment selection and IP addressing, managed switch and inter-VLAN routing configuration, post-migration verification and

4.3.8 Packet Tracer – Configure Layer 3 Switching and Inter-VLAN ...

Capabilities of a multilayer switch include the ability to route from one VLAN to another using multiple switched virtual interfaces (SVIs), as well as the ability to convert a Layer 2 switchport

Secure VLAN configuration: a practical guide and best

VLANs segment the physical network into isolated logical networks, reducing broadcast traffic and improving performance. The correct use of access

VLAN Segmentation Best Practices for Multi-Tenant Environments

Broadcast Domain Containment and Layer 2 Security Implementation Guide Step 1: Logical Design and IP Subnet Allocation Step 2: Wired Switch Fabric Configuration Step 3: Wireless LAN Controller and

4.5.2 Lab – Implement Inter-VLAN Routing (Answers)

ObjectivesBackground / ScenarioRequired ResourcesInstructionsRouter Interface Summary TableModern switches use virtual local-area networks (VLANs) to improve network performance by separating large Layer 2 broadcast domains into smaller ones. VLANs can also be used as a security measure by separating sensitive data traffic from the rest of the network. In general, VLANs make it easier to design a network to support the goals of an organi...See more on itexamanswers Cisco Press

Inter-VLAN Routing using Layer 3 Switches (4.3) - Cisco Press

In this sample chapter from Switching, Routing, and Wireless Essentials Companion Guide (CCNAv7) for Cisco Networking Academy students, you will learn how to troubleshoot common inter-VLAN

Routing on firewall or core switches? : r/networking

Where i get confused is - where would you configure routing and interVLAN traffic? On Fortigate or core switches. In my research I'm getting mixed suggestions - Some say that core switches are for

What Is a Layer 3 Switch? Definition, How It Works,

Summary If you're asking "what is a layer 3 switch," the short answer is: it's a multilayer switch that brings routing intelligence into the LAN switching

Cisco-Packet-Tracer-Enterprise-Network/README.md at main

A Cisco Packet Tracer enterprise network project demonstrating VLANs, Inter-VLAN Routing, OSPF, DHCP, PAT, ACLs, SSH, wireless networking, subnetting, and hierarchical network design. Includes

Verify VLAN Routing and Gateway Before Replacing Network

Many connectivity issues are caused by incorrect VLANs, routing, or gateway configuration rather than hardware failures. Here are three things I always verify:
#VLAN Configuration - Is the device ...

What Is a Layer 3 Switch? Features, Benefits, and Use

Switching Functionality: At its core, a Layer 3 switch forwards packets within a single VLAN using MAC address tables, similar to a Layer 2

Layer 2 vs Layer 3 Switches in 2026: Optimizing

What is a Layer 3 Switch (Multilayer Switch)? Core Role and Capabilities A Layer 3 switch combines L2 switching with hardware-accelerated routing: It supports

Configure Inter-VLAN Routing with Catalyst Switches

This document describes how to configure Inter VLAN routing with Cisco Catalyst series switches.

Secure-Hotel-Enterprise-Network/README.md at main

Design an enterprise hotel network Implement VLAN segmentation Configure Inter-VLAN Routing Secure the network using Cisco security features Validate the implemented security controls Practice

What Is a Core Switch in Networking?

How do I configure VLANs on a core switch? VLAN configuration involves italic creating VLANs italic, italic assigning ports to VLANs, and italic configuring inter-VLAN routing.

Inter-VLAN Routing Configuration

Configuring inter-VLAN routing typically involves setting up VLAN interfaces, assigning IP addresses to each VLAN, and enabling routing on the network device.

How to Set Up VLAN Routing on a Netgear Managed Switch Using

How to Set Up VLAN Routing on a Netgear Managed Switch Using CLI Commands — Complete Guide Learn exactly how to configure inter-VLAN routing on Netgear managed switches

Enterprise-Multi-Branch-Network-OSPF/README.md at main

This project demonstrates the design and implementation of a real-world enterprise multi-branch network using Cisco Packet Tracer. The network consists of four branch offices

Contact Us

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